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Amendments to the Claims

1-21. (Cancelled)

22. (Currently Amended) A method for allocating bits to encode each frame of an image sequence, each frame of said image sequence having at least one object, said method comprising the steps of:

(a) determining a target frame bit rate, T_{frame}, for the frame; ~~and~~

(b) allocating said target frame bit rate among the at least one object in accordance with ~~a target object bit rate for the at least one object~~ the formula:

$$V_i = K_i \times T_{frame}$$

where V_i is a target object bit rate for each object, and K_i is proportional to an average pixel value for the object; and

(c) recursively adjusting the target frame bit rate for each frame in the sequence.

23. (Previously Presented) The method of claim 22, further comprising determining said target object bit rate for the at least one object in accordance with a mean absolute difference (MAD) of said object.

24. (Previously Presented) The method of claim 22, further comprising adjusting said target object bit rate in accordance with a measure of a first in-first out (FIFO) buffer fullness.

25. (Previously Presented) The method of claim 22, further comprising allocating said target object bit rate to code syntax information, motion information, and shape information of the object.

26. (Previously Presented) The method of claim 25, further comprising adjusting said target object bit rate allocation to said shape information of said object.

27. (Currently Amended) The method of claim 22, further comprising the step of: (ed) generating a quantizer scale for said at least one object in accordance with said target object bit rate.

28. (Currently Amended) The method of claim 27, further comprising the step of:

(de) encoding said at least one object with said quantizer scale.

29. (Currently Amended) Apparatus for encoding each frame of an image sequence, said each frame having at least one object, said apparatus comprising:

a motion compensator for generating a predicted image of a current frame;

a transform module for applying a transformation to a difference signal between the current frame and said predicted image, where said transformation produces a plurality of coefficients;

a quantizer for quantizing said plurality of coefficients with at least one quantizer scale; and

a controller for selectively adjusting said at least one quantizer scale for a current frame in response to a target object bit rate for the at least one object, and for determining said target object bit rate from a target frame bit rate, T_{frame}, in accordance with the formula:

$$V_i = K_i \times T_{frame}$$

where V_i is a target object bit rate for each object, and K_i is proportional to an average pixel value for the object.

30. (Previously Presented) The apparatus of claim 29, wherein said controller determines said target object bit rate for the at least one object in accordance with a mean absolute difference (MAD) of said object.

31. (Cancelled)

32. (Currently Amended) A computer-readable medium having stored thereon a plurality of instructions which, when executed by a processor, perform steps comprising:

(a) determining a target frame bit rate, T_{frame}, for each frame in an image sequence, wherein said each frame includes at least one object; and

(b) allocating said target frame bit rate among the at least one object in accordance with ~~a target object bit rate for the at least one object~~ the formula:

$$V_i = K_i \times T_{frame}$$

where V_i is a target object bit rate for each object, and K_i is proportional to an average pixel value for the object; and

(c) recursively adjusting the target frame bit rate for each frame in the sequence.

33. (Previously Presented) The computer-readable medium of claim 32, further comprising an instruction to determine said target object bit rate for the at least one object in accordance with a mean absolute difference (MAD) of said object.

34. (Previously Presented) The computer-readable medium of claim 32, further comprising an instruction to adjust said target object bit rate in accordance with a measure of a buffer fullness.

35. (Previously Presented) The computer-readable medium of claim 32, further comprising an instruction to allocate said target object bit rate to code syntax information, motion information, and shape information of the object.

36. (Previously Presented) The computer-readable medium of claim 35, further comprising an instruction to adjust said target object bit rate allocation to said shape information of said object.

37. (Currently Amended) The computer-readable medium of claim 32, further comprising an instruction to perform the step of:

(ed) generating a quantizer scale for said at least one object in accordance with said target object bit rate.

38. (Currently Amended) The computer-readable medium of claim 37, further comprising an instruction to perform the step of:

(de) encoding said at least one object with said quantizer scale.

39. (Previously Presented) The method of Claim 22, comprising determining said target frame bit rate from a remaining number of bits for the image sequence, a number of remaining frames in the image sequence, and/or a number of bits encoding a previous frame.

40. (Previously Presented) The method of Claim 22, further comprising adjusting said target object bit rate in accordance with a buffer fullness measure.

41. (Currently Amended) The method of Claim 22, ~~comprising recursively adjusting~~ wherein said target frame bit rate is recursively adjusted by a polynomial regression process.

42. (Previously Presented) The method of Claim 22, further comprising:

estimating a complexity of a type of picture;

deriving a predicted number of bits to code the frame from the estimated picture complexity; and

calculating a quantizer scale for the frame in accordance with the complexity measure.

43. (Previously Presented) The method of Claim 22, further comprising encoding the frame.

44. (Previously Presented) The method of Claim 22, further comprising selecting said target object bit rate for the at least one object in accordance with mean absolute differences (MAD) of said at least one object.

45. (Previously Presented) The method of Claim 44, further comprising producing said MAD for the at least one object from a sum of absolute differences (SAD) of the pixels for each of the at least one object divided by the number of pixels in the object.

46. (Previously Presented) The method of Claim 45, further comprising determining the absolute difference between pixel values in the original image and the corresponding pixel values in the predicted image for pixels in the object.

47. (Previously Presented) The method of Claim 22, further comprising determining whether said target object bit rate is sufficient to code syntax information, motion information and shape information for said object.

48. (Previously Presented) The method of Claim 47, further comprising incrementally or decrementally changing a number of bits allocated for shape coding.

49. (Previously Presented) The method of Claim 47, further comprising increasing the target object bit rate when it is smaller than that necessary to code syntax information, motion information and shape information for the object in the previous frame, or decreasing the target object bit rate when it is greater than that necessary to code syntax information, motion information and shape information for the object in the previous frame.

50. (Previously Presented) The method of Claim 22, wherein said at least one object comprises a plurality of objects.